

ISR Concepts for Unique Persistent Wide Area Motion Imagery Data Set



S&T Campaign: Information Sciences
Sensing & Effecting

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Research Objective

- To exploit a unique Persistent Wide Area Motion Imagery data set consisting of co-located Wide Area Motion Imagery (WAMI), Full Motion Video (FMV), and LiDAR imagery available for unrestricted use in developing and analyzing new techniques and algorithms to improve Image Understanding.
- ARL collected an unclassified, versatile set of precisely registered wide area motion imagery, LIDAR (Buckeye), and narrow field of view full motion video (EO/IR) that can be used for R&D purposes.



BuckEye collected lidar elevations and 10-cm orthophotos fused with ARL 3D Fusion Viewer

Challenge

- Auto tracking algorithms for Wide Area data sets
- Patterns of Life recognition algorithms



WAMI Image from Collection Site

ARL Facilities and Capabilities Available to Support Collaborative Research

- Wide Area Data – 110 MegaPixel Color EO
 - 2 hours available (19.7 hrs total)
 - 12 TB recorded
 - 387,000 Frames
- FMV – Wescam MX-15Hdi Video MWIR, Color EO, Low light Monochrome
 - EO FMV 20.0 hrs
 - IR FMV 20.0 hrs
 - 2 TB data
- Buckeye
 - 1m post spacing terrain Light Detection and Ranging (LIDAR)
 - Coincidentally collected with 10 cm color EO imagery
- Instrumented tracking data from ground vehicles and foot traffic
- Wide Area Imagery analysis tools APIX and Pursuer

Complementary Expertise/ Facilities/ Capabilities Sought in Collaboration

- Access to other large multi-Int data sets such as Bluegrass
- Access to data from other organizations including AFRL, and NGA
- Truth data of WAMI data sets
- Sequestered data for algorithm testing and verification
- Resident WAMI analysts

